Abhinav Gorantla

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EDUCATION

ARIZONA STATE UNIVERSITY, Ira A Fulton Schools of Engineering **Tempe, AZ**
Master of Science in Computer Science (CGPA: 3.89/4) *May 2025*

- Coursework: Artificial Intelligence, Multimedia and Web Databases, Knowledge Representation and Reasoning, Data Intensive Systems for Machine Learning, Advanced Operating Systems, Database Management Systems Implementation.

VELLORE INSTITUTE OF TECHNOLOGY, School of Computer Science & Engineering **Vellore, TN, India**
Bachelor of Technology in Computer Science and Engineering (CGPA: 8.94/10) *May 2023*

- Key Coursework: Data Structures and Algorithms, Database Management Systems, Operating Systems, Computer Networks, Applied Linear Algebra, Artificial Intelligence, Machine Learning, Discrete Math and Graph Theory, Image Processing.

EXPERIENCE

ARIZONA STATE UNIVERSITY **Tempe, AZ**
Graduate Services Assistant *March 2024 – Current*

- Working at EMIT Lab on a project for ASU Skysong under the supervision of Dr. Candan. Responsibilities include developing and maintaining a web interface with Node.js, React.js, Python FastAPI, MongoDB and RabbitMQ and integrating it with the SCOPUS API for machine learning and report generation tasks.
- Designed an optimized backend architecture to enhance data flow efficiency and boost server response time by 80%.

WEBKNOT TECHNOLOGIES PVT. LTD. **Remote**
SDE Intern *April 2022 – June 2023*

- Revamped API endpoints within the Palette project, achieving a notable 30% reduction in response times.
- Engineered a custom plugin for Sisense BI software, to display geojson data on a GeoJSON layer on maps rendered via DeckGL.
- Enhanced data flow efficiency of the DeckGL plugin within Sisense by optimizing JAQL queries, resulting in a 40% reduction in query response time and a more seamless user experience.

PROJECTS

Time Series Forecasting using Enhanced GAFs

- Leveraged Gramian Angular Fields to encode time series data, seamlessly integrating with a CNN for accurate stock trend predictions, discerning between rising and falling trends with precision.

Automatic Essay Grader using NLP

- Developed a comprehensive Natural Language Processing pipeline to extract cosine similarity, Latent Semantic Analysis, TF IDF scores, and Orthography features from essays, enabling accurate essay scoring using various Machine Learning Algorithms. Project documentation can be accessed **here**.

Multimodal Image Retrieval System using Advanced Feature Analysis and Search Techniques

- Developed a Python-based image retrieval engine encompassing feature extraction from Caltech101 dataset images, latent semantics computation, clustering, and classification. Employed Locality Sensitive Hashing to index image features, optimizing nearest neighbor searches and ensuring scalability for expansive image datasets.

AGCLI (A command line utility to update npm packages on a Github project)

- Employed Node.js, Commander.js, octokit.js, and the GitHub API to create a command-line utility. It efficiently updates npm packages in projects and initiates GitHub pull requests, simplifying version management and enhancing workflow automation.

Spell Checker and auto-corrector using TRIE and BK Trees

- Implemented BK Trees, TRIE Trees and Hash Tables and provided a comparative study on their performance with respect to auto suggestions and correction of words. I developed this as a command line tool.

LEADERSHIP

THEP Journalistic Literature Club, *Vice Chairperson*

- Established and sustained a robust MERN stack application as the cornerstone of the club's online newsletter platform.
- Pioneered the creation of "The Almost Worthwhile Podcast" for our club, achieving an impressive audience of nearly 800 listeners during its inaugural month.

Fifth Pillar - Anti Corruption NGO, *Editor-in-Chief*

- Oversaw and directed a 50-member editorial team, responsible for the editing and publication of articles on our blog website.
- Innovated by introducing new content formats like "Law Talks," resulting in a remarkable 50% expansion in the club's social media and community outreach.

SKILLS

Programming: Python, C++, C, Java, JavaScript, TypeScript
Web Technologies: Tailwind, Bootstrap, NodeJS, ExpressJS, NestJS, ReactJS, FastAPI
Other: Shell scripting, MongoDB, Google Firebase, MySQL, pytorch, OpenCV, AWS